theory of symmetric functions. The author has extended the subject of these memoirs in a paper with the title "Memoir on symmetric functions of the roots of systems of equations" in the Philosophical Transactions, A. (1890).—The next paper, by C. P. Steinmetz, was read before the New York Mathematical Society, and is entitled "Multivalent and univalent involutory correspondences in a plane determined by a net of curves of *n*th order."—The following note, also read before the same Society, is on the algebraic proof of a certain series. It supplies a "temporary lack," which was regretted by the author, E. McClintock, in a memoir which will be found in vol. ii. p. 108. The same writer furnishes another addition to the memoir just referred to (vol. ii.), on independent definitions of the functions log x and e^x.—H. B. Newson writes on a pair of curves of the fourth degree, and their application in the theory of quadrics; and H. P. Manning finishes this instalment with a note on linear transformation, which was suggested by a method employed by Prof. Cayley, F.R.S., in vol. v. of the *Amer. Journal.*

THE articles in the numbers of the *Journal of Botany* for October and November are mostly of interest to specialists in local floras. Mr. A. Fryer describes and figures a new English *Potamogeton* (or, rather, hybrid). Mr. T. H. Buffham describes and figures the hitherto unknown plurilocular sporanges in two sea-weeds, *Asperococcus bullosus* and *Myriotrichia clavæformis.* Mr. F. N. Williams contributes a synopsis of the primary characters in the species of *Rheum.*

THE last number received of the *Botanical Magazine* published at Tokyo, Japan (for June), contains an interesting article, illustrated, on a new Japanese *Prasiola, P. japonica*, by Dr. R. Yatabe, which, the author states, is collected in large quantities in the districts where it grows, and is sold as an article of food under different names in different localities. It is eaten either slightly broiled or with vinegar, the mode of preparation being very similar to that of the ordinary purple and green lavers. Other articles in the same number are on the reproduction of *Laminaria japonica;* on a recent problem in vegetable physiology (apparently the greatly discussed question of the direct absorption of nitrogen from the air by plants); and on the colours and scents of flowers; but as all these are unfortunately in Japanese, they are inaccessible to the English reader.

THE number of the *Nuovo Giornale Botanico Italiano* for October is chiefly occupied with the Proceedings of the Italian Botanical Society. The attention of Italian botanists is still directed to the interesting phenomena connected with the pollination of the Aroideæ: Signor Caleri has a paper on the flowering of *Arum Dioscoridis*, and Prof. Arcangeli one on the fertilizers of *Helicodiceros muscivorus.* He is unable to discover any evidence that the latter plant is really carnivorous.—Signor Martelli discusses a vine-disease which has lately appeared in the neighbourhood of Florence, and which he identifies with the "black rot" of the American grape, caused by a Pyrenomycetous fungus, *Physalospora Bidwelli.*

SOCIETIES AND ACADEMIES.

LONDON.

Entomological Society, October 7.—Dr. D. Sharp, F.R.S., Vice-President, in the chair.—The Chairman referred to the death, on September 14 last, of Mr. E. W. Janson, who had been a member of the Society since 1843, and who had formerly filled the offices of secretary and librarian respectively.—The Rev. Dr. Walker exhibited a long series of several species of *Erebia*, and of *Argynnis pales*, which he had recently captured near Roldal, in Norway.—Mr. W. L. Distant exhibited specimens of *Danais chrysippus*, with its two varietal forms, *alcippus*, Cram., and *dorippus*, Klug., all which he found together in the Pretoria district of the Transvaal. Mr. Jenner Weir and Colonel Swinhoe took part in the discussion which ensued as to these forms and their distribution.—The Rev. W. F. Johnson sent for exhibition specimens of *Velia currens* from stagnant water near Armagh; also a specimen of *Nabis limbatus*, killed whilst holding on to its prey, a very hard species of Ichneumon. Mr. Saunders thought that, from the nature of the Ichneumon, the only chance the *Nabis* had of reaching its internal juices would be through the anal opening, as recorded by Mr. E. A. Butler in a similar case, in the *Entomologist's Monthly Magazine*, October 1891.—Mr. F. P. Pascoe exhibited two British species of Diptera, unnamed. He said they had been submitted to Mr. R. H. Meade, but were unknown to him, and are probably new to the British list.—Mr. R. Adkin exhibited two specimens of a supposed new species of Tortrix (*Tortrix donelana*, Carpenter), bred from larvæ found on pine-trees at Tuam. Mr. C. G. Barrett said he examined the specimens with great care, but he did not consider that they belonged to a new species. He was unable to distinguish them from *Tortrix viburnana.*—M. A. Wailly exhibited preserved larvæ, in various stages, of *Citheronia regalis*, which he had bred from ova received from Iowa, United States. He said that the natives called this larva the Hickory Horned Devil, and that the specimens exhibited were the first that had been bred in this country. M. Wailly further exhibited three female specimens of *Antheræa yama-mai* bred from cocoons received from Japan; also a nest of cocoons of *Bombyx radama*, received from the west coast of Madagascar. Prof. J. B. Smith, of the United States, and Colonel Swinhoe took part in a discussion on the habits of the larvæ of *Citheronia regalis*, and as to the period at which they dropped their spines prior to pupating.—Dr. Sharp exhibited several specimens of a weevil, *Ectopsis ferrugalis*, the ends of the elytra of which bore a close resemblance to the section of a twig cut with a sharp knife. He said he had received the specimens from Mr. G. V. Hudson, of Wellington, New Zealand, who stated that they were found resting in large numbers on dead trunks and branches of *Panax arborea* in the forests.—Mr. G. C. Champion stated that the species of *Forficulidæ*, captured by Mr. J. J. Walker, R.N., in Tasmania, and exhibited by himself at the meeting of the Society in April last, was, he believed, referable to *Anisolabis tasmanica*, Bormans, described in the *Comptes rendus* of the Ent. Soc. Belgique, 1880.—The Rev. A. E. Eaton made some remarks on the synonymy of the *Psychodidæ*, and stated that, since August 1890, he had identified all of the British species in Mr. Verrall's list, except *Sycorax silacea.*—Mr. Gervase F. Mathew, R.N., communicated a paper entitled "The Effect of Change of Climate upon the emergence of certain species of Lepidoptera." A discussion followed, in which Mr. Stainton, F.R.S., Mr. Barrett Dr. Sharp, F.R.S., and Mr. McLachlan, F.R.S., took part.

Royal Microscopical Society, October 21.—Dr. R. Braithwaite, President, in the chair.—The President said that the pleasure with which he met the Fellows after the vacation was very sadly marred by the death of one of their Secretaries, Mr. John Mayall, Jun. The loss they had sustained was one which the Society could hardly hope to replace, because perhaps there was no living person who knew more about the microscope and its applications than their deceased friend Mr. Mayall. The difficulty in which they were placed had, however, for the present been met by the kindness of Dr. Dallinger, who had undertaken to fill up the vacant place until the end of the current session.—Mr. A. D. Michael proposed, and Mr. T. H. Powell seconded, that a special vote of thanks be given to Dr. Dallinger for his kindness in accepting the office of Secretary. The vote of thanks was carried by acclamation.—Mr. F. Chapman read his paper on the Foraminifera of the Gault.—Sir Walter J. Sendall exhibited and described a new apparatus which he had devised for making accurate measurements with the camera lucida, the inherent faults of which were explained by drawings on the blackboard. Mr. E. M. Nelson said there could be no doubt that camera lucida measurements when made in the ordinary way as described were grossly incorrect, and that the apparatus that had been devised was most ingenious and thoroughly scientific in principle. He thought, however, that there was a much simpler method of obtaining measurements by projecting the image for a distance of 5 feet; the curve would with so large a radius be practically reduced to a straight line. The camera lucida and neutral tint reflector were only rough-and-ready means, and useful only for ready reference; where correctness was of importance, the eye-piece micrometer would best meet the requirements; the ruling of eye-piece micrometers was now done so perfectly that it was possible to arrive at measurements even as small as 1/500,000 of an inch with far greater accuracy than could be attained with any machine. Dr. W. H. Dallinger thought there could be no doubt of the value of the apparatus within certain limits, but it would require great care for use with high powers, partly on account of its weight if made in brass, as the specimen before them; perhaps it might be made in aluminium or some other light material. The discussion was continued by Messrs. A. D. Michael, C. Beck, and Sir Walter J. Sendall.—Mr. W. I.

Chadwick described the Leach lantern microscope as follows. The microscope can be applied to any oxy-hydrogen lantern. It is screwed on the front in place of the ordinary lantern objective, the size of flange required being 2½ inches; when the lantern objective flange is larger than this, an adaptor must be provided; and when the draw-tube of the lantern is "ricketty," a rigid lengthening tube may be adapted. The lantern condenser should be about 4 inches or 4½ inches in diameter, and of the triple form. The stage of the microscope is open at both sides, and at the top also, and serves for all classes of objects, whether ordinary microscopic slides or polariscope crystals, shown with either narrow angle rays or by the convergent system of lenses. The stage being so constructed, it is extremely accessible for the introduction of sub-condensers, with which the instrument is provided. The object-holder is quite a novel idea, the principal mechanism of it is placed under the stage (to be out of the way); two arms passing through slots in the bottom of the stage, actuated by a spring and manipulated by a milled head, serve to hold the objects flat against the inside surface of the front of the stage. The diaphragm, or compound wheel of diaphragms, is rotative on a pivot attached to the plate arm in such a manner that the whole may be raised out of the field altogether, and dropped into it again, in an instant; when the wheel is raised, a spring catch holds it in position. When in this position the whole field of the microscope can be utilized for showing objects up to 1½ inches in diameter. When, as in using polarized light, it is desired not to be incommoded with the diaphragms, the detachable plate carrying the compound wheel can be instantly removed from the stage, and when again required it can be as quickly restored. The arms of the object-holder projecting through the bottom of the stage have sufficient lateral movement to admit any zoophyte trough or wooden frame or combination of wooden frames up to 1 inch in thickness. Thus the advantages of this arrangement are clearly manifest. The two sub-condensers with which the instrument is provided are found to give satisfaction with all objectives of from 2½ to $\frac{4}{10}$ inch focus. When the light has been properly concentrated, high powers can be used. It should also be observed that when high powers are used the front lens of the objective is open to the view of the manipulator, a great convenience when inserting the object, by enabling it to be immediately adjusted within the area of the lens. When polarized light is to be used, the polarizing prism must be pushed into the rotating tube of the instrument by removing the concave lens at the back, and after inserting the prism this concave lens may be replaced in an instant. The rotating tube is an advantage over fixed tubes, as the polarizing prism can by this arrangement be placed in any desired azimuth which best suits the object. The convergent system of lenses for use with polarized light in transmitting rays through biaxial crystals was worked out by Mr. Leach. It gives powerful illuminations, and includes an angle of 170°. The front focussing arrangement was introduced by Mr. Leach in 1883. Before that time several supplementary lenses had to be kept in readiness for use, as different classes of crystals were placed in the polariscope. Mr. Leach discovered how these supplementary lenses might be dispensed with, and fitted up his system accordingly; and now all makers of first-class polariscopes attach to their instruments this great improvement. The concave field lens, with which the instrument is provided, is absolutely necessary when the polarizing prism is in use. With all powers it enlarges the field, and equalizes the distribution of illumination. The three objective adaptors with which the instrument is provided admit of any microscope power with the standard screw; they are made to slide in the front tube of the microscope, which is provided with a rack and pinion, and also with a fine screw movement. Thus, by having the various powers already screwed into the adaptors, one may be changed for another almost instantaneously. And into the front or tube portion of these adaptors the tube of the amplifier is made to slide. The amplifier which is provided is a Barlow lens, and being achromatic, it enhances the aplanatic qualities of the objective. It has been asserted "that high power cannot be used in the lantern microscope; that it is unable to exhibit fine detail upon the screen, and that no alum trough is required." No doubt this is all true so far as applied to inefficient instruments. But the Leach microscope does require an alum trough, because where great light is concentrated from the oxy-hydrogen luminant, great heat must, from the very nature of the means employed, be concentrated with it, and the alum trough is the only practical thing which can be used to absorb the heat rays. The alum trough is of large size, and is used in the ordinary slide stage of the lantern. At the conclusion of the paper, Messrs. Chadwick and Leach gave a demonstration with common and polarized light.

CAMBRIDGE.

Philosophical Society, October 26.—Prof. G. H. Darwin, President, in the chair.—The officers for the ensuing session were elected as follows:—President: Prof. G. H. Darwin. Vice-Presidents: Prof. Hughes, Prof. Thomson, Mr. J. W. Clark. Treasurer: Mr. R. T. Glazebrook. Secretaries: Mr. J. Larmor, Mr. S. F. Harmer, Mr. E. W. Hobson. New Members of Council: Mr. H. F. Newall, Mr. C. T. Heycock, Mr. A. E. H. Love.—The following communications were made to the Society:—On the absorption of energy by the secondary of a transformer, by Prof. Thomson.—On an experiment of Sir Humphry Davy's, by Mr. G. F. C. Searle. Two copper wires are passed up through holes about 5 centimetres apart in the bottom of a flat trough, their ends being level with the surface of the trough. Mercury is then poured into the trough to a depth of about 4 millimetres. On sending a powerful current through the mercury by means of the two wires the mercury in the immediate neighbourhood of the electrodes was elevated into a small cone 2 or 3 millimetres in height.—Some notes on Clark's cells, by Mr. R. T. Glazebrook and Mr. S. Skinner. In addition to the causes of variation indicated by Lord Rayleigh, the authors find that the state of amalgamation of the zinc pole may cause a fall in force if the zinc does not show a bright surface. This is worked out by means of a testing cell into which the faulty zincs are transplanted. The result is confirmed by Swinburne's experiments on zinc rods in zinc sulphate solution. To correct this fault previous amalgamation in the presence of dilute sulphuric acid is recommended, or immersion of the zinc in the paste. Dr. Hopkinson's method of testing cells by tapping was shown.—Illustrations of a method of measuring ionic velocities, by Mr. W. C. D. Whetham.—On gold-tin alloys, by Mr. A. P. Laurie.

PARIS.

Academy of Sciences, November 2.—M. Duchartre in the chair.—On aberration, by M. Mascart.—Note on Mont Blanc Observatory, by M. J. Janssen. This is a brief report of the attempt to reach the rock through the snow on the summit of Mont Blanc, in order to obtain a foundation for a proposed Observatory. In spite of circumstances which rendered the proposed building impossible, M. Janssen believed that an edifice of some kind resting on the snow would permit the necessary observations to be carried on, and had one constructed according to his ideas. No displacement of the erection occurred during the twenty days previous to M. Janssen's departure from the summit of the mountain. The construction of a similar but more important building is therefore contemplated for next year.—Note by M. Armand Gautier, accompanying the presentation of his work on "Biological Chemistry."—On the Arago Laboratory, by M. de Lacaze-Duthiers.—Contribution to the natural history of the truffle: parallelism between the Terfaz or Kama (*Terfezia*, *Tirmania*) of Africa and Asia and the truffles of Europe, by M. A. Chatin. In the comparison the points considered are geographical distribution, climate, soil, nutritious plants, periods of ripening, depth in soil, and numerous other characteristics.—An excursion in the Rocky Mountains, by M. Albert Gaudry. At the end of the recent Geological Congress at Washington a party was organized to visit the Rocky Mountains. An account is given of some of the objects of geological interest observed by the excursionists.—Note on the storm that visited Martinique on August 18, 1891 (an extract from the *American Journal of Meteorology*), by M. Faye.—Researches on butylene monobromides, by M. E. Reboul. There are three butylene monobromides known besides the isobutylene of Boutlerow. The author describes the preparation and properties of one of these, to which he assigns the constitution $CH_3\text{—}CH_2\text{—}CBr{=}CH_2$. He proposes to term it ethyl-acetylene α-hydrobromide.—Observations of two new asteroids discovered at Nice Observatory on September 24 and October 8, 1891, by M. Charlois. Observations of position are given.—On the dimensions and form of the section of a stream (*veine*) of gas under limited counter-pressure during a limited delivery, by M. Parenty.—On a model of a luminous fountain, by M. G. Trouvé.—On the direct combinations of metals with chlorine and bromine, by MM. Henri Gautier and Georges Charpy.

With the exception of aluminium, most of the metals are hardly attacked by dry chlorine and bromine at the ordinary temperature. Aluminium, however, is acted on very energetically by liquid chlorine and bromine, whilst magnesium particularly resists the action. The reactions are very slow when the dry halogens are used. When water is present the action becomes more rapid, hydrogen being generally liberated owing to its decomposition, but in some cases the water remains unaltered.—Contribution to the chemico-physical study of the function of the kidney, by M. C. Chabrié.—On the chronology of the eruptive rocks of Jersey, by M. A. de Lapparent.—New geological observations of the Island of Sardinia, by M. Charles de Stefani.—New considerations on the Vertebrate fauna of the Upper Miocene in the Isle of Samos, by M. Forsyth Major.—The gravels of Montfort, by M. Ed. Piette.

BERLIN.

Physiological Society, October 16.—Prof. du Bois-Reymond, President, in the chair.—Dr. Lüderitz gave an account of an investigation of the changes of blood-pressure in the left ventricle and right carotid which result from gradual compression of the aorta.—The President exhibited three very successful photographs of the posterior (retinal) surface of the eye.—Doctor Wertheim recorded the disappearance of the indirect image of an illuminated disk when the object itself, as seen directly, is suddenly darkened.—Dr. Lilienfeld gave an account of a chemical examination of blood-platelets, which showed that they consist of a compound of albumin and nuclein, whose behaviour speaks against their being preformed structures.

Physical Society, October 23.—Prof. du Bois-Reymond, President, in the chair.—The Society resolved to present to Prof. von Helmholtz, on November 2, in celebration of his seventieth birthday, an address prepared by Prof. von Bezold. -Messrs. Haensch described a modification which they had made in a spectrophotometer.—Dr. Rubens gave an account of a new method of determining dispersion and refraction in the ultra-violet rays, a method which, unlike that employed by Langley, yields more accurate results by very simple means. He has already made determinations with a series of glasses, with water and with carbon bisulphide. The curve of dispersion he finds to be, on the whole, the same as that obtained by Langley for rock-salt.—Prof. Preyer enunciated his hypothesis as to the genealogy of the chemical elements.

AMSTERDAM.

Royal Academy of Sciences, September 26.—Prof. van de Sande Bakhuysen in the chair.—Prof. Franchimont showed a little bottle filled with a new chemical compound, obtained and examined by Dr. C. A. Lobry de Bruyn. This hydroxylamine is a crystalline matter without colour and smell. It is prepared by the action of natrium-methylate on the methyl-alcoholic solution of the compound of hydroxylamine and HCl, and by distillating and fractionating the result *in vacuo*. The specimen is pure to 99·6 per cent; it melts at 31°·5, and distillates under a pressure of 35 mm. between 63°·5 and 65°·5.—Mr. Behrens spoke of the microscopic structure of hard steel. If high microscopic powers are used, the network in hardened steel may be made visible on polished slices without etching or annealing. The dark sinuous lines answering to the bright ones shown by Sorby and Wedding on etched slices, it is proved that hardened steel contains hard granules bound up in a matrix of soft iron. Some varieties of grey iron from small castings may be hardened like steel, most of the graphite disappearing. After annealing the hardened metal at a red heat, the slices were dotted with blackish dust, which formed circles round the globules of the crystallites and little heaps in the midst of them. It is to be presumed that graphite has reappeared in the course of the annealing. Full details will speedily be given in the *Recueil des travaux chimiques des Pays-Bas*.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

BOOKS.—Pflanzenleben, Zweiter Band: A. K. von Marilaun (Leipzig, Bibliographisches Institut).—British Fungi: G. Massee (L. Reeve).—Studies in American History: M. S. Barnes and E. Barnes (Boston, Heath).—A Text-book of the Science of Brewing: E. R. Moritz and G. H. Morris (Spon).—The Universal Atlas, Part 8 (Cassell).—Geological and Natural History Survey of Canada, Annual Report, vol. iv., 1888–89 (Montreal, Foster, Brown).—Daily Weather Charts to illustrate the Tracks of Two Cyclones in the Arabian Sea (Eyre and Spottiswoode).—Meteorological Charts of the portion of the Indian Ocean adjacent to Cape Guardafui and Ras Hafún (Eyre and Spottiswoode).—Arithmetical Physics; Part *2a*, Magnetism and Electricity; 3rd edition: C. J. Woodward (Simpkin).—A Graduated Course of Natural Science, Part 2: B. Loewy (Macmillan).—Delagoa Bay, its Natives and Natural History: R. Monteiro (Philip).—Observations made at the Hong Kong Observatory in the Year 1890: W. Doberck (Hong Kong).—Light, an Elementary Treatise: Sir H. T. Wood (Whittaker).—A First Book of Electricity and Magnetism: W. P. Maycock (Whittaker).—The Alkali-Maker's Hand-book; 2nd edition: G. Lunge and F. Hurter (Whittaker).—The Practical Telephone Hand-book: J. Poole (Whittaker).—The Plant World: G. Massee (Whittaker).—T. Cooke and Sons' Catalogue of Astronomical and Scientific Instruments, 1891 (York).—A Text-book of Physiology, Part 4, 5th edition, revised: Prof. M. Foster (Macmillan).—Iconographia Floræ Japonicæ, vol. i. Part 1: Dr. R. Yatabe (Tokyo, Maruya).—Catalogue of the Michigan Mining School, Houghton, Michigan, 1890–91 (Houghton).—Manual for the Physiological Laboratory; 5th edition: Drs. Harris and Power (Baillière).—Die Entstehung der Landtiere, ein Biologischer Versuch: Dr. H. Simroth (Leipzig, Engelmann).—Revisio Generum Plantarum, Pars 1: Dr. O. Kuntze (Dulau).

PAMPHLETS.—Proposed Railway through Siberia: W. M. Cunningham (London).—Molecular Motion in the Radiometer, in Crookes' Tubes and in some other Phenomena: D. S. Troy (New York, Hodges).—Oysters and Oyster-Fisheries of Queensland (Brisbane)

SERIALS.—Quarterly Journal of the Geological Society, No. 188, vol. xlvii., Part 4 (Longmans).—Morphologisches Jahrbuch, 17 Band, 4 Heft (Leipzig: Engelmann).—Quarterly Journal of Microscopical Science, No. 128 (Churchill).—Boletim da Commissão Geographia e Geologica do Estado de S. Paulo, Nos. 4–7 (S. Paulo).—Mittn. des Vereins für Erdkunde zu Halle a/S (Halle a/S)—Geological Magazine, November (K. Paul).—Jahrbuch der Meteorologischen Beobachtungen der Wetterwarte der Magdeburgischen Zeitung, Band ix. Jahrg. x., 1890 (Magdeburg).—Records of the Australian Museum, vol. i. No. 8 (Sydney).—Journal of the Chemical Society, November (Gurney and Jackson).—Sitzungsbericht der k. Akademie der Wissenschaften Math. Naturw. Classe, xcix. Band, Abthg. 1, Heft 4–10; Abthg. *2a*, Heft 4–10; Abthg. *2b*, Heft 4–10; Abthg. 3, Heft 4–10 (Wien).

CONTENTS.

PAGE

The Hygiene of Water-Supply. By **Prof. Percy F. Frankland, F.R.S.** . . . 25
Causation of Sleep . . . 26

Our Book Shelf:—

Spencer: "Physiography—Elementary Stage" . . . 27
Lupton: "Mayhew's Illustrated Horse Doctor."—**W. F. G.** . . . 27
Boerlage: "Handleiding tot de Kennis der Flora van Nederlandsch Indië."—**W. B. H.** . . . 28
Step: "By Sea-shore, Wood, and Moorland" . . . 28

Letters to the Editor:—

Note on the Chromosphere Spectrum.—**Prof. C. A. Young** . . . 28
Formation of a Temporary Cyst in the Fresh-water Annelid *Æolosoma*.—**Frank E. Beddard** . . . 28
Polytechnics and Recreation.—**Miss Emma Cons** . 28
"W = M*g*."—**Prof. Arthur G. Webster; A. G. G.** 29
Alum Solution.—**T. C. Porter** . . . 29
The Salt Lake of Aalia Paakai.—**A. B. Lyons** . . . 29
Meretrix, Lamarck, *versus Cytherea*, Lamarck, 1806.—**C. R. Osten Sacken** . . . 30
A Plague of Frogs.—**Lieutenant B. A. Muirhead, R.N.** . . . 30
Red Light after Sunset.—**Dr. M. A. Veeder** . . . 30
Topical Selection and Mimicry.—**David Syme; Dr. Alfred R. Wallace** . . . 30
Prof. Pictet's Laboratory at Berlin. By **Prof. R. du Bois-Reymond** . . . 31
Results of Experiments at Rothamsted on the Question of the Fixation of Free Nitrogen. By **Dr. J. H. Gilbert, F.R.S.** . . . 32
Fossil Birds in the British Museum. (*Illustrated.*) . 33
Iron Carbonyl from Water Gas. By **A. E. Tutton** . 36
Cape Guardafui and the Neighbouring Sea . . . 36
Notes . . . 37

Our Astronomical Column:—

Outburst of Dark Spots on Jupiter . . . 41
Wolf's Periodic Comet . . . 42
The Total Lunar Eclipse of November 15 . . . 42
The Elements of the Minor Planets . . . 42
Some Experiments made with the View of ascertaining the Rate of Propagation of Induced Magnetism in Iron. By **Fred. T. Trouton** . . . 42
Oysters at the Antipodes . . . 43
The Tibet Expedition . . . 45
University and Educational Intelligence . . . 45
Scientific Serials . . . 45
Societies and Academies . . . 46
Books, Pamphlets, and Serials Received . . . 48